Listing of the Claims:

Claims 1 – 9 (Cancelled).

10. (Currently Amended) ~~The phased array of claim 1~~ A phased array for controlling a radiation pattern comprising:

a plurality of first tunable elements connected in series between adjacent power divider ports;

a source connected to one input of the plurality of first tunable elements at a first power divider port;

a respective antenna connected to each of the power divider ports; and

a respective second tunable element connected in parallel with each antenna, wherein each second tunable element is a capacitor, and each capacitor is one of a switching fixed capacitor and a switching transmission line.

Claims 11 – 32 (Cancelled).

33. (New) In a phased array for controlling a radiation pattern of an array of antennas, the improvement comprising:

a single extended resonance circuit topology for performing both functions of power dividing and phase shifting, the single extended resonance circuit topology including a plurality of antennas defining an array, a first tunable impedance connected in series between each respective pair of adjacent antennas, and a second tunable impedance connected in parallel with each respective antenna, wherein a phase of each respective antenna is controlled by applying a voltage to one of the first and second tunable impedances within the phased array.

34. (New) The phased array of claim 33 wherein the single extended resonance circuit topology further comprises:

an extended resonance dividing circuit coupled to each of an N plurality of ports, the extended resonance dividing circuit including the first tunable impedance connected between each of the N plurality of ports, the tunable impedance

transforming the admittance of one port coupled to the tunable impedance to its conjugate at a second one of the N plurality of ports, a power source having an impedance matched to the impedance of an endmost port in the array, such that resonance of all of the ports with one another makes a voltage at each port a predetermined magnitude, and a second impedance coupled between each port and ground to vary the relative phase shift between each port.

35. (New) The phased array of claim 33 wherein the first tunable impedance is a tunable inductor.

36. (New) The phased array of claim 33, wherein the first tunable impedance is an impedance inverter including two quarter-wave transformers with a tunable capacitor connected in shunt therebetween.

37. (New) The phased array of the claim 33, wherein the first tunable impedance is a tunable transmission line having a length, and the second tunable impedance is a tunable capacitance.

38. (New) The phased array of claim 37 further comprising:

a single biased voltage controlling the tunable capacitance connected to each of the plurality of ports.

39. (New) The phased array of claim 33, wherein the phase shift between successive ports are a predetermined magnitude.

40. (New) A phased array for controlling a radiation pattern of an array of antennas comprising:

an array of series connected antenna cells;

a power source connected to the array; and

each antenna cell including a power divider port, and an antenna connected to the power divider port, and an extended resonance circuit coupled to

each power divider port, the extended resonance circuit performing power division and phase shifting for the power divider port and the antenna in each antenna cell.

41. The phased array of claim 40, wherein the extended resonance circuit further comprises:

a tunable inductance connected to the power divider port, and a tunable capacitance connected to the power divider port; the tunable inductance and the tunable capacitance cooperating to perform power division and phase shifting for the antenna in each cell.

42. (New) The phased array of claim 41 further comprising:

the tunable inductance and the tunable capacitance simultaneously performing power division and phase shifting for the antenna in each antenna cell.

43. (New) The phased array of claim 41 wherein:

the tunable inductance and the tunable capacitance provide predetermined power division at each antenna and predetermined phase shifting between each antenna cell.

44. (New) The phased array of claim 41 wherein:

the tunable capacitance is connected to the power divider port in each antenna cell in parallel with the antenna; and

the tunable inductance is serially connected between the power divider ports of each antenna cell.

45. (New) In a phased array for controlling a radiation pattern of an array of antennas, the improvement comprising:

single extended resonance circuit means, including both a tunable inductance in series with respect to each antenna in the array of antennas, and a tunable capacitance connected in parallel with respect to each antenna in the array of antennas, for dividing power and for shifting phase in a tunable relationship between

adjacent antennas; and

a control signal connected to the single circuit means for tuning a relationship of phase shifting between adjacent antennas.

46. (New) The phased array of claim 45 wherein the single extended resonance circuit means further comprises:

an extended resonance dividing circuit coupled to each of an N plurality of ports, the extended resonance dividing circuit including a first impedance connected between each of the N plurality of ports, the impedance transforming the admittance of one port coupled to the impedance to its conjugate at a second one of the N plurality of ports, a power source having an impedance matched to the impedance of an endmost port in the array, such that resonance of all of the ports with one another makes a voltage at each port a predetermined magnitude, and a second impedance coupled between each port and ground to vary the relative phase shift between each port.

47. (New) The phased array of claim 46, wherein the first impedance is a tunable impedance.

48. (New) The phased array of claim 46 wherein the first impedance is the tunable inductor.

49. (New) The phased array of claim 46, wherein the first impedance is an impedance inverter including two quarter-wave transformers with a tunable capacitor connected in shunt therebetween.

50. (New) The phased array of the claim 46, wherein the first impedance is a tunable transmission line having a length, and the second impedance is the tunable capacitance.

51. (New) The phased array of claim 50 further comprising:

a single biased voltage controlling the tunable capacitance connected to each of the plurality of ports.